## **REMARKS**

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1, 15, 25, 26, 29, 30, 31, 32, 33, and 34 are amended. Claims 1 to 34 remain pending in this application.

#### 35 U.S.C. § 103

In the Office Action dated July 18, 2002, claims 1-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Kathail et al (U.S. Patent Number 5,802,365, hereinafter the Kathail patent) in view of Cavill (U.S. Patent Number 6,003,069, hereinafter the Cavill Patent). Applicant respectfully traverses the rejection because the Kathail patent taken alone, or in combination with the Cavill patent, fails to teach or suggest the concepts taught in claims 1 to 34.

## The Applicant now distinguishes each claimset in order:

To distinguish the Kathail/Cavill combination from **claim 1**, as amended, the Applicant emphasizes that there is no suggestion in either the Kathail patent nor the Cavill patent to use "the driver identifier to select a closest matching driver of a plurality of drivers to install at the server" using the driver identifier, and to "install, at the server, the selected driver".

Applicant describes the terms "client" and "server" as typically used in computer system in a manner that has gained a general acceptance. The usage of these terms is reflected in Fig. 1 (and described in page 5 line 7 to page 6 line 9) of the present disclosure. Notably, on page 1, lines 7 to 12, it is stated "In a typical server-client system, a server computer is connected to several client computers or terminals via a network. In such systems, applications are executed at the server

rather than at the client." It is also stated on page 1, columns 14 to 15 "A server in such a system typically has an operating system that can run several client sessions concurrently."

The Applicant emphasizes the difference between the usage of the term "client" as used in the pending application which uses a client/server system compared to the usage of the term "client" as recited in the Kathail patent. As such, for the following reasons, the Applicant disagrees with the conclusion in the first line in paragraph 4 of the Office Action dated July 18, 2002 that "Kathail teaches receiving a driver identifier for a printer attached to a client by the client." (emphasis added). The Kathail patent uses the word "client" to describe a client of a printer driver (such as an application) instead of a client under the client/server meaning of the word as in the present application. Kathail states in column 31, lines 21-30: "Once loaded, a driver must be installed in a Unit Table (stored in memory) to become available to Device Manager clients ("applications"). .... For example, SCSI drivers use the range 32 to 38 as a convention to their clients." In performing a word search on the USPTO database of the Kathail patent, the word "server" does not appear while the word "client" appears several times.

To accentuate this difference in the usage of the word "client" between Kathail and the usage of the word "client" as used in the present application, note that the Kathail patent further states in column 40, lines 56-59: "Uninitialized and unopened devices or services that may be used by client applications are located, initialized, and opened at the time that a client makes a request for the devices or services." The Kathail patent additionally states in column 41, line 63 to column 42, line 1: "There is a distinction between device initialization and device opening. A device opening action is a connection-oriented response to client requests.

Device drivers should expect to run with multiple Open and Close commands. This means that <u>each driver is responsible for counting open requests from clients</u>, and must not close itself until all clients have issued close requests."

As such, Kathail describes the term "client" as a client of the device driver. By comparison, the term "client" as claimed within the present application relates to a client-server computer system. Applicant submits that Kathail's Dynamic Matching Device does not teach the server-client environment of the present disclosure.

The Applicant agrees with the assessment in paragraph 4 of the Office Action that the Kathail patent does not "explicitly teach installing a print driver on the server side." Applicant asserts that there is no server side suggested in Kathail largely because the computer is not necessarily a client nor a server as claimed in the client/server system of the present disclosure.

The Examiner states in the Office Action mailed July 18, 2002 that the Kathail patent teaches "installing the selected driver" and "printing using the installed driver." The Applicant emphasizes that Kathail does not teach, or suggest, how to install a selected driver in a client/server computer system. One skilled in the art has to go elsewhere for these teachings to formulate this rejection. Most notably, the Office Action is relying on the teachings of the present disclosure to formulate this rejection.

In considering the Cahill patent, the Applicant notes that while Cahill does show a client/server system, there is no teaching of selecting at least one of the plurality of printer drivers for installation. This language is similar to as claimed in claim 1. Cahill instead states in column 2, lines 36-45:

"the present invention presents a new printer driver system which is surprisingly effective for use with NCs (Network Computers). In its simplest terms, the present invention divides the print task up into portions that can be processed locally and portions that can be processed by a server. Typically, the server will be more capable of processing data than the NC and will have a greater amount of storage space. The benefits of the invention are that the server is used for temporary storage and processing, thereby alleviating the burden on the NC."

To provide this interaction to effect printing between the client and the server, however, Cavill must provide great limitations on the printer driver that are not required by present claims 1-34. Cavill states "Under the present invention, if the driver is written in a platform independent language such as the Java® programming language, then the same driver software can be used on any NC device that supports the Java Virtual Machine (JVM) definition. The only additional requirement for this platform independence is the definition of a\_ common API that is the source of the graphics and text primitives." Cavill therefore provides platform independence as the only workable solution for selecting printer drivers to be installed in his system. There is no suggestion in the Cahill patent, however, of <u>selecting</u> at least one of the plurality of printer drivers for installation as claimed in claim 1. One skilled in the art upon considering Cavill would not know which printer driver to select nor where (in the claimed client/server system) to install the driver. This claimed feature is therefore lacking in both the Kathail patent and the Cahill patent. The Applicant therefore contends that maintaining the present rejection considering this prior art required the use of

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impermissible hindsight, since this claimed feature is not taught nor suggested by either reference relied on in the Office Action dated July 18, 2002.

Further, claim 1 includes the language "receiving at the server a driver identifier for a printer that can print information at the client". The Kathail patent does not include a server, and as such cannot receive the driver identifier for a printer attached to the client at the server. The Cavill patent, which does include a server, does not receive a driver identifier for a printer that is used to select a closest matching driver of a plurality of drivers to install at the server. Instead, Cavill's driver is written in a platform independent language, and therefore does not require a server to select a closest matching driver. The only suggestion in the Kathail/Cavill combination to one having ordinary skill in the art to provide a printer attached to a client is provided by the teachings of the present disclosure.

Claim 1 includes the language "installing, at the server, the selected driver." The Kathail patent, which has no server, cannot teach installing the selected driver at the server. The Cavill patent installs at the server "a driver written in platform independent language." Since the present disclosure as set forth in claim 1 does not require a platform independent language, the teachings of Cavill teach away from present claim 1.

Claim 1 also includes the language "allowing applications executing on the server to print to the printer using the installed driver". The Kathail patent, which has no server, cannot teach allowing applications executing on the server to print...". The Cavill patent teaches executing platform independent languages to execute on the server. Since present claim 1 does not execute platform independent language, the teachings of Cavill teach away from the presently

claimed disclosure. As such, it is improper to suggest that the Kathail/Cavill combination would yield the concepts of claim 1.

Combining the Kathail patent and the Cahill patent (to provide the Kathail/Cahill combination) would not overcome their lack of teaching of present claims 1-34. One having ordinary skill in the art, upon considering the Kathail patent, would not have applied the specific computer to a client or a server in a client-server environment. The Cavill patent does not teach "selecting a closest matching driver of a plurality of drivers to install" as claimed in claim 1. Instead,

ethicus of a printer driver based on platform independence. Actually, the selecting process performed by Kathail and Cavill are inconsistent. There is no teaching to combine the teachings of the Kathail patent (selecting a printer driver in a single system) with the teachings of the Cavill patent (printing on a client/server system where the installed printer driver is platform independent) to yield the present disclosure as claimed. As such, the platform independence requirement of Cavill would destroy any teachings of Kathail to select one printer driver from a plurality of printer drivers. The Examiner is not free to take teachings piecemeal from different references to formulate a 35 U.S.C. §103 rejection. Instead, there must be some teaching for the combination.

Applicant submits that claims 2 to 14 define over the prior art of record since they are each dependent claims that depend from, and therefore include the claimed limitations of, independent claim 1. Applicant has already indicated why claim 1 distinguishes over the Kathail/Cavill combination. Further reasons why these dependent claims distinguish are now described in order.

There is no suggestion in the Kathail/Cavill combination to recite where, within the driver identifier is located within a client/server computer system as

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taught by claim 2 of the present disclosure. As such, there is no teaching in the Kathail/Cavill combination to suggest receiving a driver identifier from the client. As to claim 4, there is no teaching in the Kathail/Cavill combination to access a library at the server to use the driver identifier (the using includes selecting a closest matching driver as recited in claim 1) since the Kathail patent does not disclose a client/server configuration, and the Cavill patent does not disclose selecting the closest matching driver.

Considering the claim 5 language "if a particular driver of the plurality of drivers has a corresponding driver identifier that is the same as the received driver identifier, then selecting that driver to install at the server," the Kathail patent does not disclose a server, or suggest how a driver identifier would be installed at a driver considering the client/server device of the Cavill patent.

Relating to the **claim 15**, there is no suggestion in either the Kathail patent nor the Cavill patent (of the combination thereof) to automatically select at least one of a plurality of drivers corresponding to a peripheral device attached to the client, and then to install, at the server, the selected at least one driver. Claim 15 recites to a peripheral device instead of a printer, as recited in independent claim 1. Several reasons why there is no suggestion have been described above relative to claim 1.

Claim 15 includes the language "installing, at the server, the selected at least one driver" with the "peripheral device attached to the client". The Kathail patent does not specifically include a server, and as such does not suggest installing a driver, or anything else, at a server. Instead, Hathail pertains to a platform independent system. The Cavill patent does not install at the server the selected at least one of a plurality of drivers corresponding to a peripheral device

attached to the client. Instead, Cavill's driver is written in a platform independent language, and therefore does not require a server to select a closest matching peripheral device. The only suggestion in the Kathail/Cavill combination upon considering the present disclosure to one having ordinary skill in the art to provide a peripheral device (e.g., a printer) attached to a client as suggested by the teachings of claims 1-34. Since the present claims as applied to the disclosure does not require a platform independent language, the teachings of the Cavill patent, as would be used to modify the Kathail patent, teach away from claim 15.

Applicant contends that claims 16 to 25 define over the prior art of record since they are each dependent claims that depend from, and therefore include the claimed limitations of, independent claim 15. Applicant has already indicated why claim 15 distinguishes over the Kathail/Cavill combination. Further reasons why these dependent claims distinguish are now described in order.

There is no suggestion in the Kathail/Cavill combination to recite where, within the driver identifier is automatically selected by a client/server computer system as taught by claim 15 of the present disclosure. As-such, there is no teaching in the Kathail/Cavill combination to suggest receiving a driver identifier from the client. As to claim 17, there is no teaching in the Kathail/Cavill combination to access a library at the server to use the driver identifier (the using includes selecting a closest matching driver as recited in claim 15 since the Kathail patent does not disclose a client/server configuration, and the Cavill patent does not disclose selecting the closest matching driver.

Relative to claim 18, there is no teaching to check whether any of the plurality of drivers has a driver identifier that is the same as the recited driver identifier, and installing that driver at the server. The Kathail patent does not show

a client/server configuration, and Cavill does not show installing the driver that has a given driver identifier at the client. Several reasons why there is no suggestion for the rejection based on the combination have been described above relative to claim 1.

To distinguish claim 26, as amended, from the Kathail/Cavill combination several reasons why there is no suggestion for the rejection based on the combination have been described above relative to claim 1. Additionally, the Applicant emphasizes that there is no suggestion in either the Kathail patent nor the Cavill patent to "receive a printer driver identifier for a printer attached to a client," and then use the printer driver identifier to select one of a plurality of printer drivers is installed at the server. The Kathail patent does not specifically include a server, and as such cannot receive the driver identifier for a printer attached to the client at the server.

The Cavill patent, which does include a server, does not receive a driver identifier for a printer that is used to select a closest matching driver of a plurality of drivers to install at the server. Instead, Cavill's driver is written in a platform independent language, and therefore does not require a server to select one of a plurality of drivers. The only suggestion in the Kathail/Cavill combination upon considering the present disclosure to one having ordinary skill in the art to combine provide a printer attached to a client is provided by the teachings of the present disclosure. The Cavill patent installs at the server "a driver written in platform independent language." Since the present disclosure as claimed does not require a platform independent language, the Cavill patent teaches away from claim 26 as claimed. As such, maintaining the rejection based on the Kathail/Cavill combination is improper.

Applicant contends that claims 27 and 28 define over the prior art of record since they are each dependent claims that depend from, and therefore include the claimed limitations of, independent claim 26. Applicant has already indicated why claim 26 distinguishes over the Kathail/Cavill combination. Further reasons why these dependent claims distinguish are now described in order.

To distinguish **claim 29**, as amended, from the Kathail/Cavill combination several reasons why there is no suggestion for the rejection based on the combination have been described above relative to claim 1. Additionally, claim 29 includes the language "a driver matching module to select at least one of the plurality of printer drivers for installation at the server, the selected at least one printer driver corresponding to a printer attached to the client." The Kathail patent does not specifically suggest using a server computer or a client computer since the computer that selects the printer driver is the one that is connected to the printer. The Cavill patent installs at the server "a driver written in platform independent language." Since the present disclosure does not require a platform independent language, the Cavill patent teaches away from the presently claimed disclosure. The only motivation for one having ordinary skill in the art to provide the Kathail/Cavill combination to "select a printer driver for installation at the server, the printer driver corresponding to a printer attached to a client" is provided by the teachings of the claim 29 and the disclosure.

Applicant contends that claims 30, 31, and 32 each define over the prior art of record since they are each dependent claims that depend from, and therefore include the claimed limitations of, independent claim 29. Applicant has already indicated why claim 29 distinguishes over the Kathail/Cavill combination. Further reasons why these dependent claims distinguish are now described in order.

Claims 30, 31, and 32 each include conditional language similar to "if a ..., then install that printer driver at the server." The Kathail patent does not show a server or a client arranged in a client/server configuration. The Cavill patent does not teach installing a selected printer driver at the server. The Kathail/Cavill combination teaches away from installing the printer driver at the server.

To distinguish **claim 33**, as amended, from the Kathail/Cavill combination several reasons why there is no suggestion for the rejection based on the combination have been described above relative to claim 1. Claim 33 includes the limitations:

a client computer having a local printer attached thereto; and

a server computer coupled to the client computer via a network, wherein ...selecting that particular printer driver without regard for whether that particular printer driver has a corresponding driver version that is the same as a driver version received as part of the printer driver identifier for installation on the server computer.

The Kathail patent does not specifically suggest using a server computer or a client computer since the computer that selects the printer driver is the one that is attached to the printer. The Cavill patent installs a driver written in platform independent language at the server. Since claim 33 does not require a platform independent language, the Cavill patent teaches away from the teachings of present claim 33. The only motivation in the Kathail/Cavill combination upon considering the present claim 33 to one having ordinary skill in the art to "select a printer driver for installation at the server, the printer driver corresponding to a printer attached to a client" is provided by the teachings of claim 33 as described in the present disclosure. Several reasons why there is no suggestion for the rejection based on the combination have been described above relative to claim 1.

Applicant submits that claim 34 defines over the prior art of record since it is a dependent claim that depends from, and therefore includes the claimed limitations of, independent claim 33. The Applicant has already indicated why claim 33 distinguishes over the Kathail/Cavill combination.

Claims 34 includes the language wherein the client computer <u>transmits</u> the printer driver identifier to the server computer. The Kathail patent does not show a computer system segmented into client computers and server computers. The Cahill patent does not suggest transmitting a printer driver. The Kathail/Cavill combination teaches away from transmitting the printer driver to the server.

In paragraph 13 of the Office Action dated July 18, 2002, the Office Action dated July 18, 2002 suggests a close review of U.S. Patent 5,920,725 that issued on July 6, 1999 to Ma et al. (hereinafter the Ma patent). The Applicant indicates that Ma discloses a distributed client-server application that is modified when it is running. While Ma describes a client-server application, the Ma reference does not remedy the deficiencies in the Kathail/Cavill combination as described above.

#### **Conclusion**

Claims 1 to 34 are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the subject application.

Respectfully Submitted,

Date: 11/14/02

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SN:09/454,221

## Marked-up Version of the Specification:

Please amend the specification as follows:

Please replace the paragraph from page 1, line 22, to page 2, line 10 with the following paragraph:

Client users frequently use peripheral devices physically attached to the client machines. For example, a user may wish to attach a printer to the user's client computer (a "local" printer) in order to print data generated by an application that is running on the server computer. To do this, currently the user must manually install the local printer and redirect the printer queue created by the server to the I/O port of the client computer to which the printer is connected. Such manual installation of peripheral devices is undesirable because it requires significant time and effort on the part of the user. A co-pending application (U.S. Patent Application No. [09/\_\_\_\_\_] 09/458,365) entitled "Automatic Detection And Installation Of Client Peripheral Devices By A Server", to Tad Brockway, Madan Appiah, Adam Overton, and Ritu Bahl, filed concurrently herewith, (Attorney Docket No. MS1-432US) describes a system which resolves many of these manual installation problems by automatically detecting such devices and installing and corresponding device drivers at the server.

# Marked-up Version of the Pending Claims Under 37 C.F.R. Section 1.121(c)(1)(ii):

Amend the claims as follows and in accordance with 37 C.F.R. Section 1.121(c)(1)(ii), by which the Applicant submits the following marked up version

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only for claims being changed by the current amendment, wherein the markings are shown by brackets (for deleted matter) and/or underlining (for added matter):

Claims 1, 15, 25, 26, 29, 30, 31, 32, 33, and 34 have been amended.

1. (Amended) A method in a server-client environment, the method comprising:

receiving at the server a driver identifier for a printer [attached to] that can print information at the client;

using the driver identifier to select a closest matching driver of a plurality of drivers to install at the server;

installing, at the server, the selected driver; and

allowing applications executing on the server to print to the printer using the installed driver.

15. (Amended) A method implemented in a server in a server-client environment, the method comprising:

automatically selecting at least one of a plurality of drivers corresponding to a peripheral device attached to the client; and

installing, at the server, the selected at least one driver wherein the server can interface with the peripheral device using the driver.

25. (Amended) [At] The method of claim 15, wherein at least one computer-readable memory [containing] contains a computer program that is executable by a processor to perform the method [recited in claim 15].

26. (Amended) One or more computer-readable media having stored thereon a computer program that, when executed by one or more processors of a server in a client-server system, causes the one or more processors to:

receive a printer driver identifier for a printer attached to a client;
use the printer driver identifier to select one of a plurality of printer drivers
to install at the server according to the following,

if a particular printer driver of the plurality of printer drivers has a corresponding printer driver identifier that is the same as the received printer driver identifier, then selecting that particular driver,

if a particular printer driver of the plurality of printer drivers currently has a corresponding printer driver identifier that is different than the received printer driver identifier but that corresponds to the same printer driver as the received printer driver identifier, then selecting that particular printer driver, and

if a particular printer driver of the plurality of printer drivers has a corresponding driver name that is the same as a driver name received as part of the printer driver identifier, then selecting that particular printer driver without regard for whether that particular printer driver has a corresponding driver version that is the same as a driver version received as part of the printer driver identifier; and

install[, at the server,] the selected printer driver at the server.

29. (Amended) An apparatus <u>including a server and a client, the apparatus</u> comprising:

a driver library including a plurality of printer drivers; and

a driver matching module to select at least one of the plurality of printer drivers for installation [on the apparatus] at the server, the selected at least one printer driver corresponding to a printer attached to [a] the client [computer].

**30.** (Amended) An apparatus as recited in claim 29, wherein the driver matching module [is] further [to]:

[check] <u>checks</u> whether any of the plurality of drivers has a corresponding driver identifier that is the same as a received driver identifier; and

wherein if a particular driver of the plurality of drivers has a corresponding driver identifier that is the same as the received driver identifier, then install that driver [on the apparatus] at the server.

31. (Amended) An apparatus as recited in claim 29, further comprising:

a mapping table to map previous driver identifiers to subsequent driver identifiers;

wherein the driver matching module [is] further [to check] checks the mapping table to determine whether any of the plurality of drivers currently has a corresponding driver identifier that is different than a received driver identifier but that is a subsequent driver identifier mapped to the received driver identifier as a previous driver identifier; and

if a particular driver of the plurality of drivers currently has a corresponding driver identifier that is different than a received driver identifier but that is a subsequent driver identifier mapped to the received driver identifier as a previous

 driver identifier, then the driver matching module [is] further [to install] <u>installs</u> that driver at the server.

32. (Amended) An apparatus as recited in claim 29, wherein the driver matching module [is] further [to]:

[check] <u>checks</u> whether any of the plurality of printer drivers has a corresponding driver name that is the same as a received driver name; and

wherein if a particular printer driver of the plurality of printer drivers has a corresponding driver name that is the same as the received driver name, then install that printer driver [on the apparatus] at the server without regard for whether that particular printer driver has a corresponding driver version that is the same as a received driver version.

**33.** (Amended) A system comprising:

a client computer having a local printer attached thereto; and

a server computer coupled to the client computer via a network, wherein the server computer includes,

a driver library including a plurality of printer drivers, and

a driver matching module to select at least one of the plurality of printer drivers for installation on the server computer to allow applications executing on the server computer to print to the local printer, the driver matching module selecting one of the plurality of printer drivers for installation based on a printer driver identifier and according to the following,

if a particular printer driver of the plurality of printer drivers has a corresponding printer driver identifier that is the same as the received printer driver identifier, then selecting that particular driver for installation,

if a particular printer driver of the plurality of printer drivers currently has a corresponding printer driver identifier that is different than the received printer driver identifier but that corresponds to the same printer driver as the received printer driver identifier, then selecting that particular printer driver for installation, and

if a particular printer driver of the plurality of printer drivers has a corresponding driver name that is the same as a driver name received as part of the printer driver identifier, then selecting that particular printer driver without regard for whether that particular printer driver has a corresponding driver version that is the same as a driver version received as part of the printer driver identifier for installation on the server computer.

34. (Amended) A system as recited in claim 33, wherein the client computer [is to transmit] transmits the printer driver identifier to the server computer.